

### IN THE CLAIMS

Please amend the claims as follows:

Claims 1-8 (Canceled).

Claim 9 (New): A two-dimensional ionising particle detector comprising:  
a matrix of detecting fibers, each detecting fiber forming a pixel of the detector and  
including a scintillator to emit scintillation light,  
wherein each detecting fiber comprises a glass capillary filled with a liquid scintillator  
for which a chemical composition is chosen such that an average free path of primary  
scintillation photons is negligible compared with a diameter of the capillary.

Claim 10 (New): A two-dimensional ionising particle detector according to claim 9,  
wherein the liquid scintillator is a binary liquid scintillator.

Claim 11 (New): A two-dimensional ionising particle detector according to claim 9,  
wherein the liquid scintillator is a ternary liquid scintillator.

Claim 12 (New): A two-dimensional ionising particle detector according to claim 9,  
wherein a solvent used in the liquid scintillator includes PXE.

Claim 13 (New): A two-dimensional ionising particle detector according to claim 9,  
wherein the liquid scintillator comprises deuterium.

Claim 14 (New): A two-dimensional ionising particle detector according to claim 9, wherein the capillaries have a diameter between 20  $\mu\text{m}$  and 500  $\mu\text{m}$  and a length between 10 and 50 mm, and the matrix has a section approximately equal to 100 x 100 mm<sup>2</sup>.

Claim 15 (New): A two-dimensional ionising particle detector according to claim 9, wherein the capillaries are placed in a vat comprising a first wall fitted with a glass port transparent at a wavelength of the scintillation light and a second wall located in front of the first wall and comprising a mirror reflecting at the wavelength, ionising particles penetrating into the detector through the mirror.

Claim 16 (New): A two-dimensional ionising particle detector according to claim 15, wherein the vat comprises a top wall and bottom walls that comprise elastic membranes to absorb thermal expansion.